STATE OF THE BROWN TROUT FISHERY

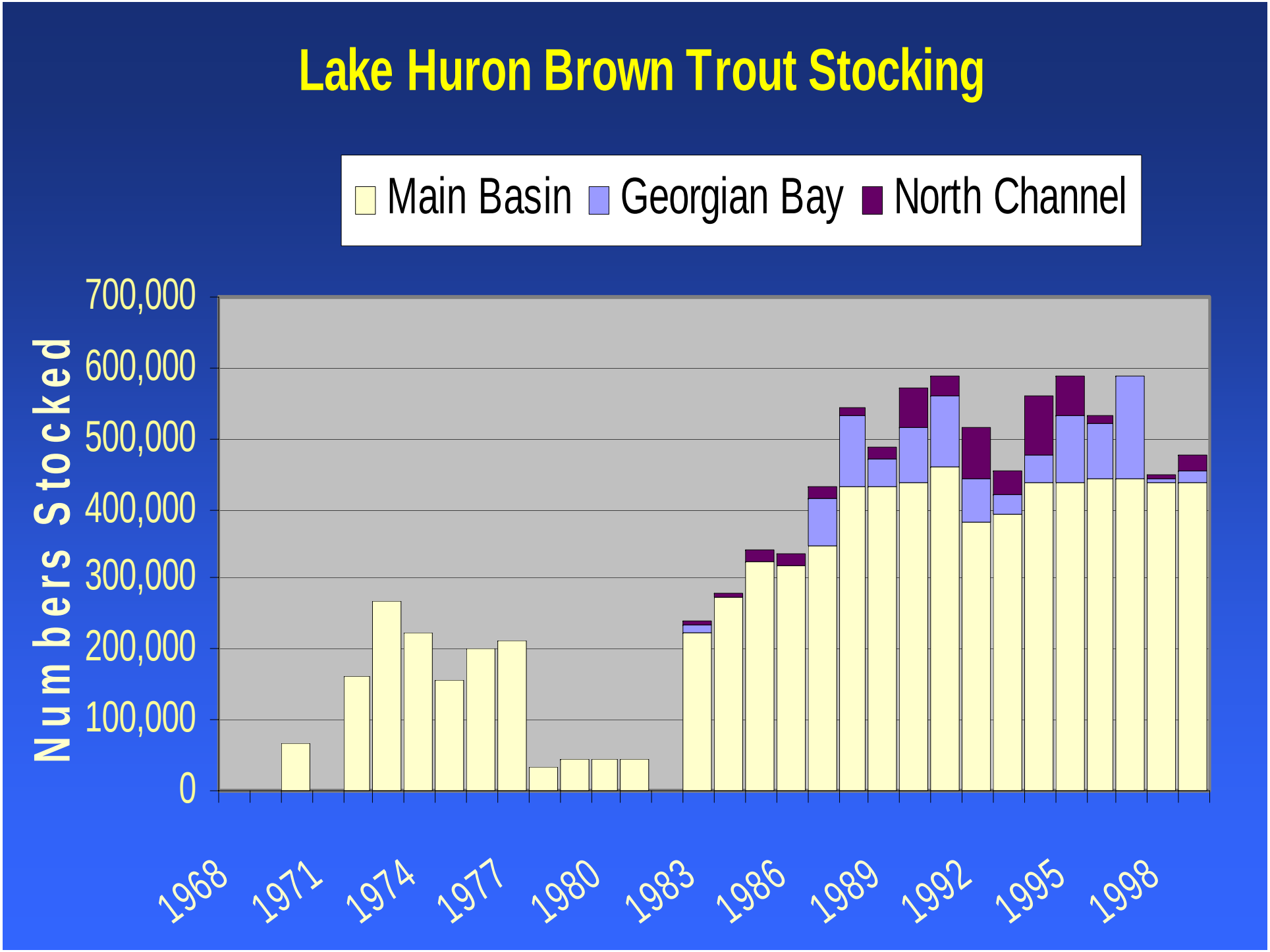
Lake Huron State of Lake Report

March 21, 2001

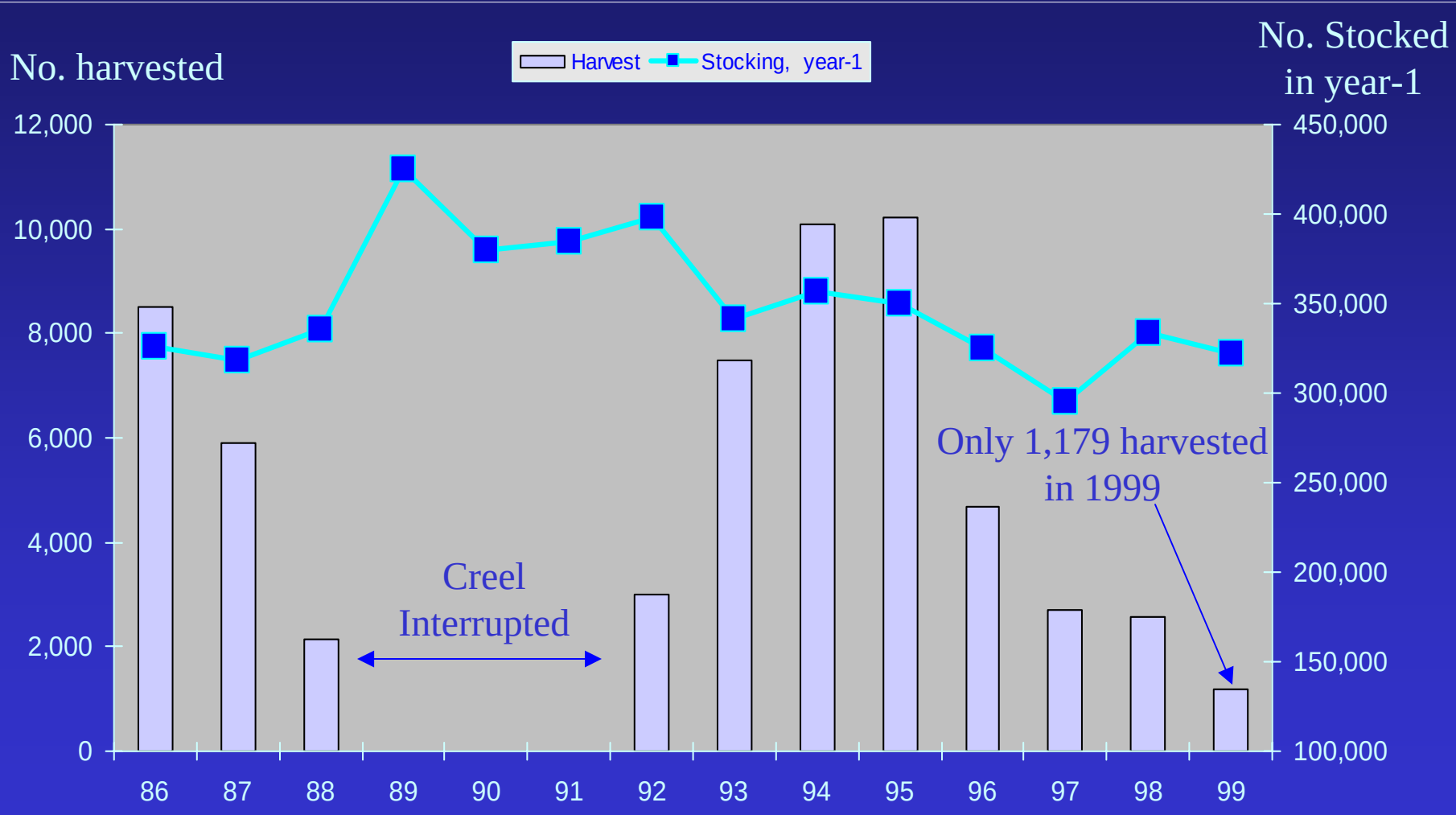
Jim Johnson, Mich. DNR, Alpena

Dave Reid, Ontario MNR, Owen Sound

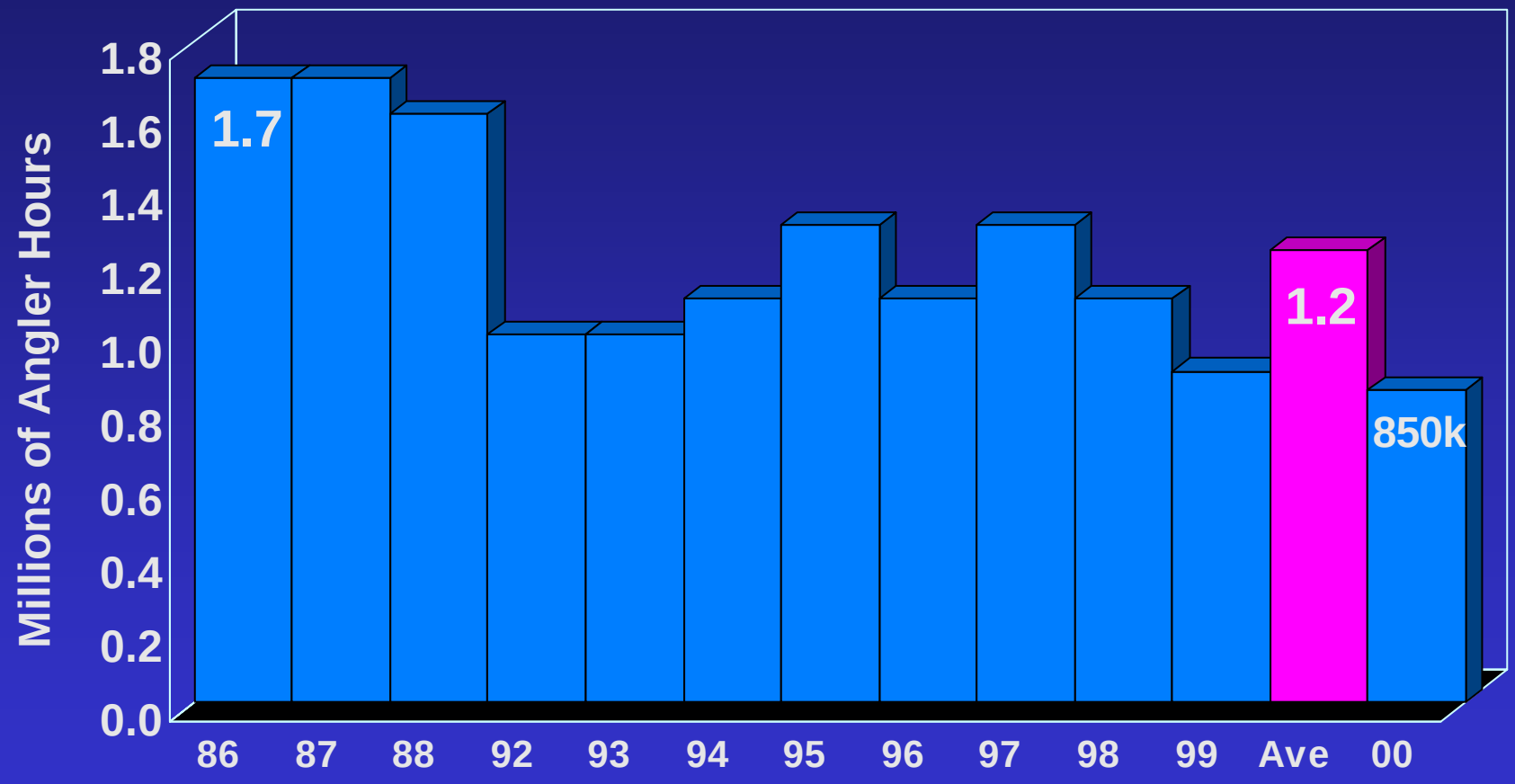
Lake Huron Brown Trout Stocking



Brown Trout Stocking & Sport Catch at Nine Lake Huron Ports, Michigan Main Basin

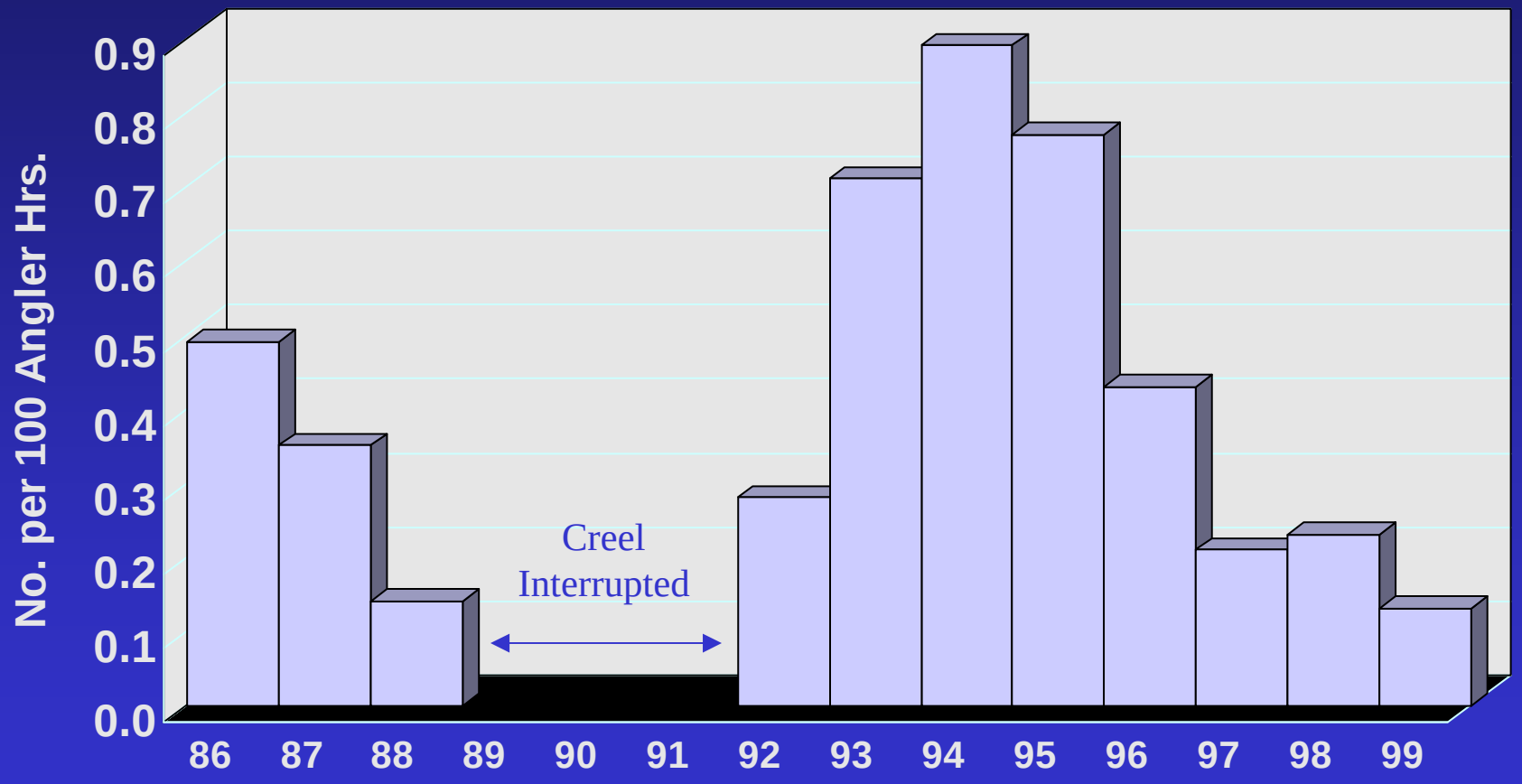


Estimated Angler Effort at Nine Michigan Lake Huron Ports in the Main Basin



Charlevoix Fisheries Station
LHEFF

Brown Trout Catch Rates at Nine Lake Huron Ports in the Main Basin



Charlevoix Fisheries Station
BNTHU

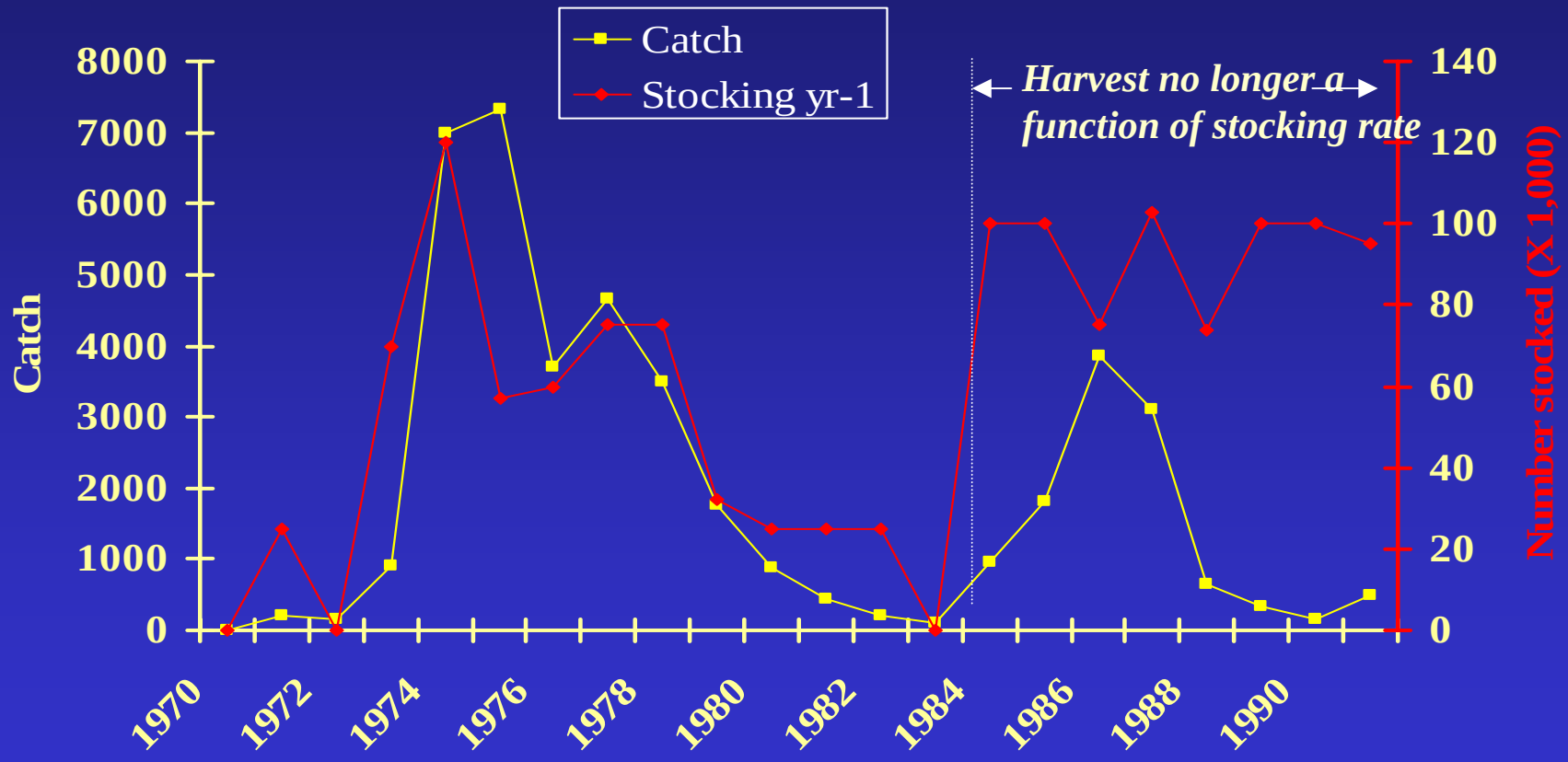
WHY??

FAILURE OF BROWN TROUT IN THUNDER BAY, LAKE HURON

A CASUALTY OF DECLINING ALEWIVES?

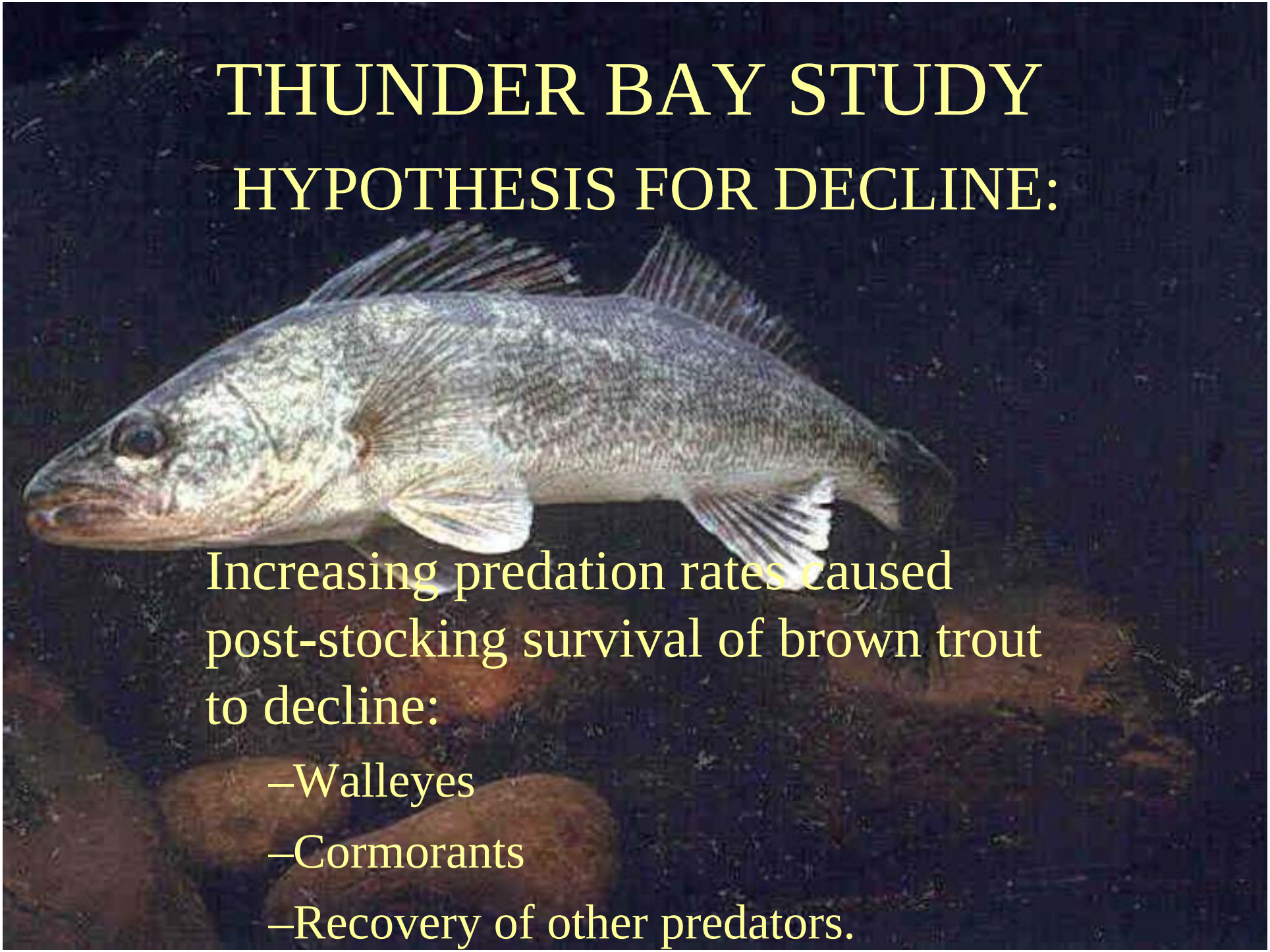
Jim Johnson
Michigan DNR
Alpena Fishery Station

TRENDS IN BROWN TROUT HARVEST AND STOCKING, THUNDER BAY



THUNDER BAY STUDY

HYPOTHESIS FOR DECLINE:

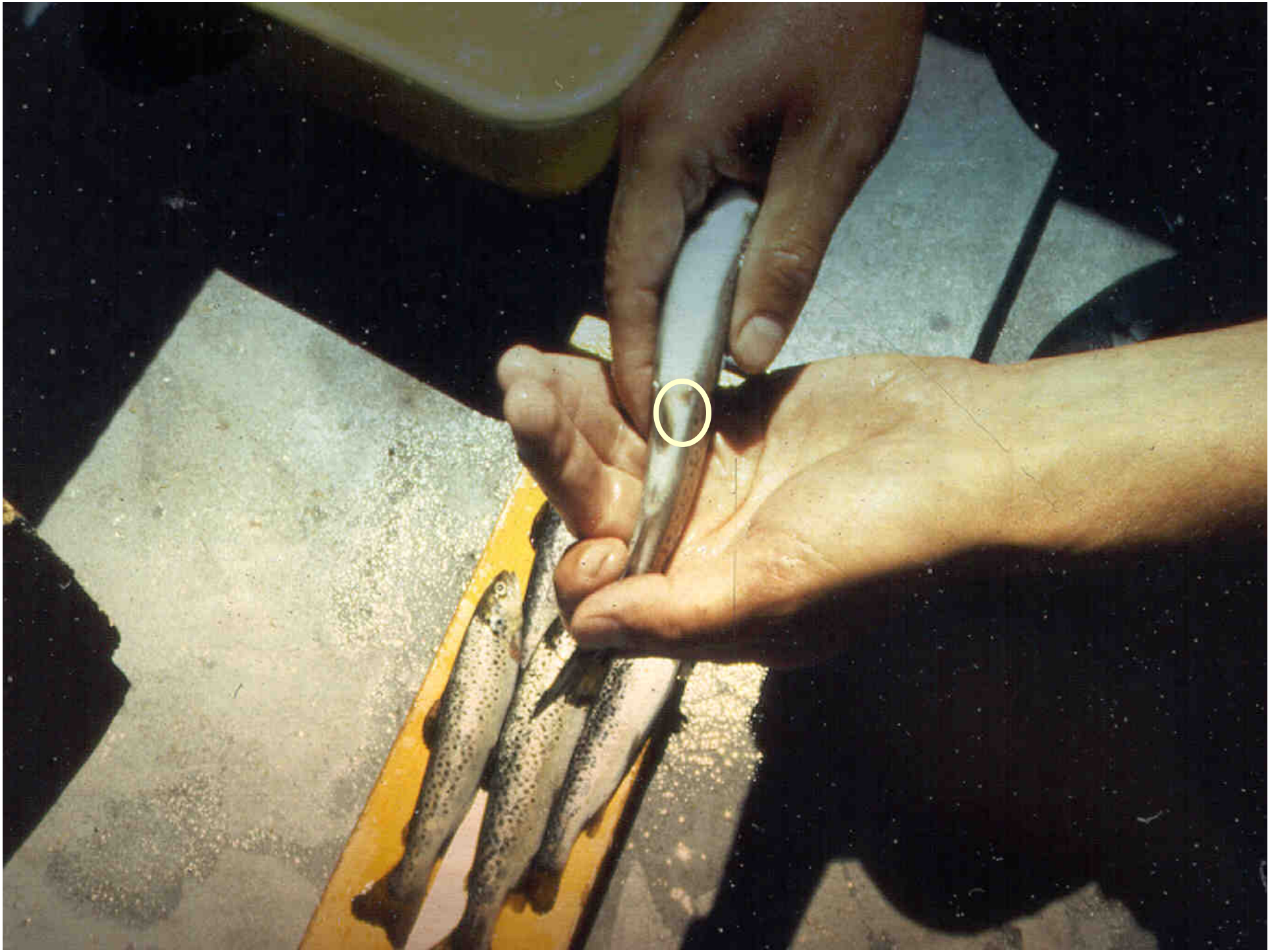


Increasing predation rates caused post-stocking survival of brown trout to decline:

- –Walleyes
- –Cormorants
- –Recovery of other predators.

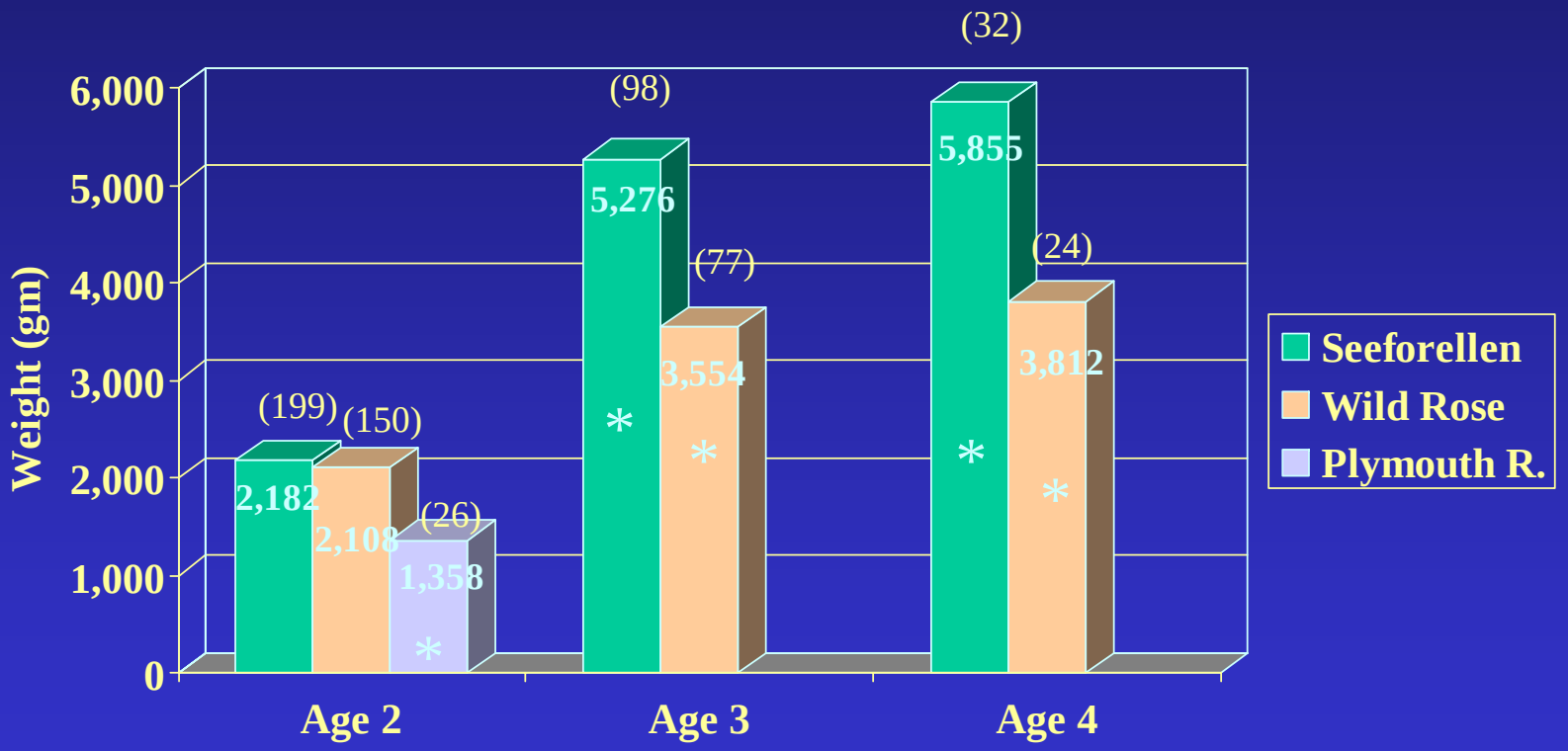
CONTRIBUTING FACTORS:

- STRAIN OF BROWN TROUT;
- STOCKING METHOD;
- (*POST-FACTO*) STOCKING TIME.



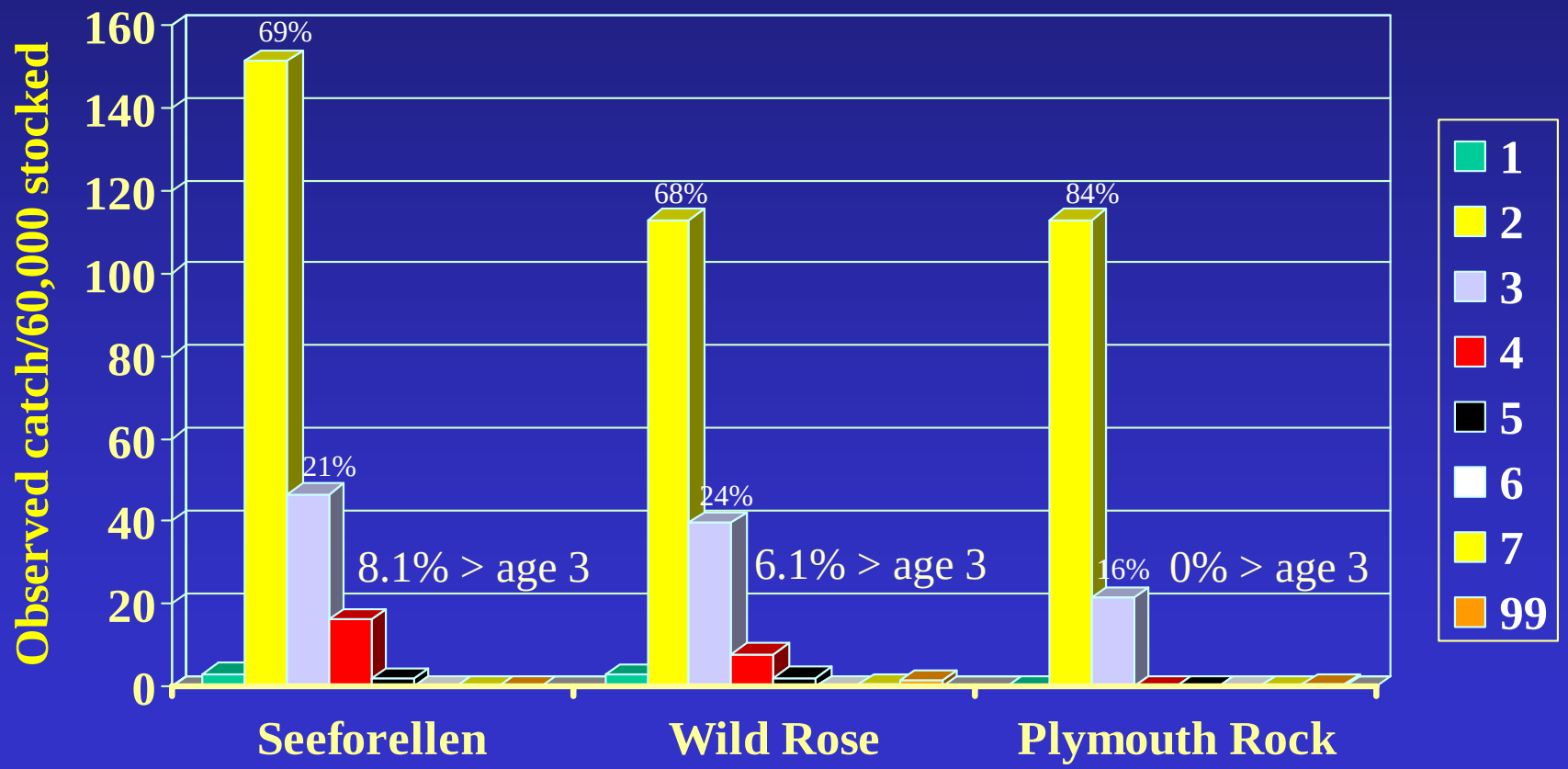
JULY WEIGHTS AT AGE BY STRAIN
ALL YEARS COMBINED

(SAMPLE SIZES IN PARENTHESES)



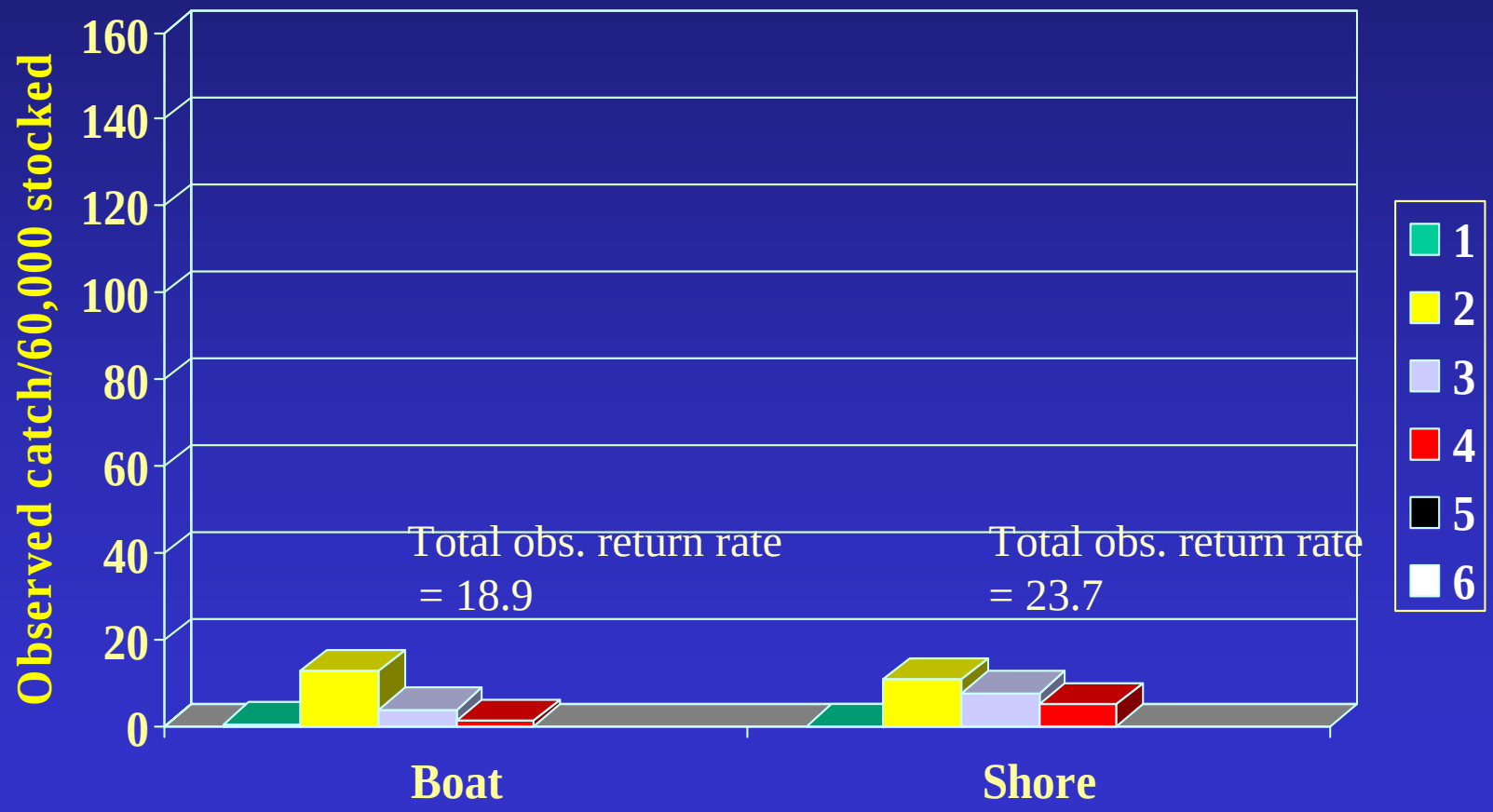
* = Significant difference ($p < 0.001$)

Age Composition of Observed Brown Trout Returns, ***By Strain***, All Ports Combined, Lake Huron, ***Stocked 1991-1995***



STOCKING EVALUATION:

Observed Brown Trout Returns, ***By Stocking Method***, All Ports Combined, Lake Huron, ***Stocked in 1996 & 1997***



DECLINING FORTUNES:

Observed returns/60,000 stocked:

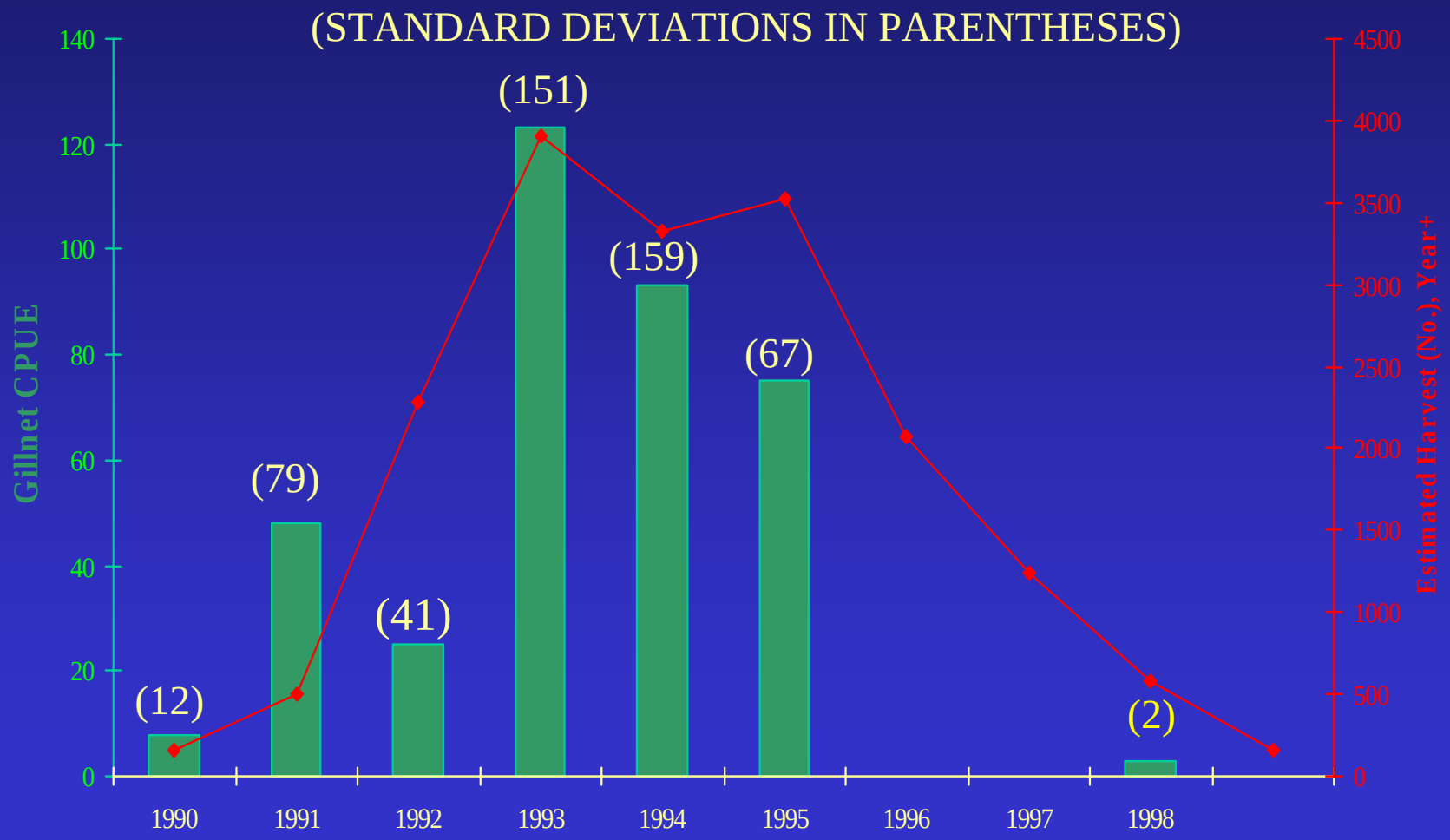
1991-1995 cohorts = 186

1996-1997 cohorts = 21

Return rate declined by 89%


Alewife assessment gear:
small-mesh gillnets

ADULT ALEWIFE CATCH PER 100 FEET OF GILL NET & ESTIMATED BROWN TROUT HARVEST, YEAR+1 THUNDER BAY, JUNE & JULY, 1990-98



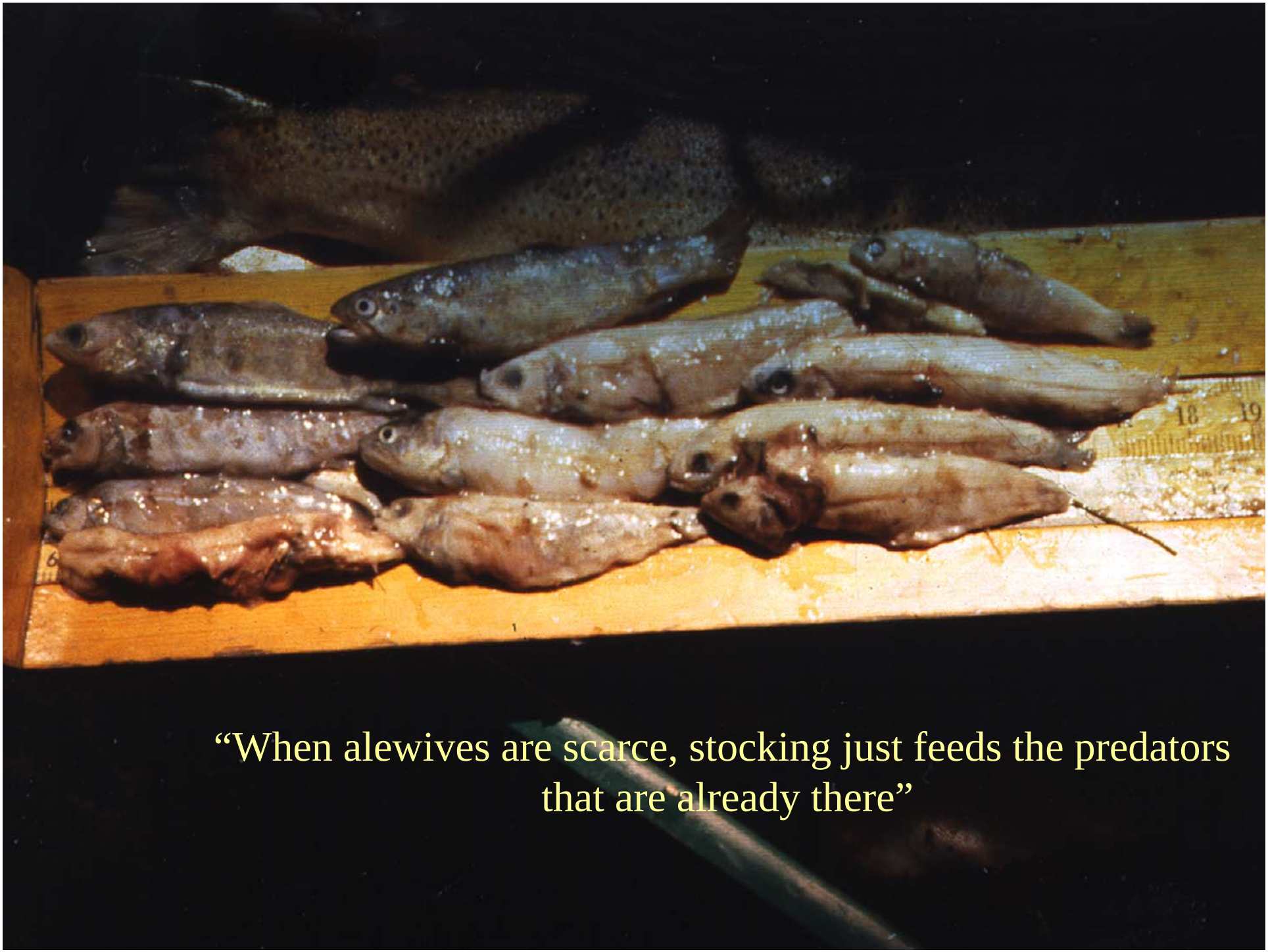
CONCLUSIONS:

- Seeforellen & Wild Rose strains superior to Plymouth Rock (based on one test);
- Seeforellen produced more consistently high returns than Wild Rose, but not always;
- Seeforellen grew significantly faster than the other two strains.

CONCLUSIONS (Continued):

- Boat stocking did not increase survival;
- Predation rates on stocked trout become excessive, regardless of stocking period or method, when spawning-phase alewives were scarce.

MANAGEMENT IMPLICATIONS



"When alewives are scarce, stocking just feeds the predators that are already there"

POSTSCRIPT

Yearling brown trout stocked in October, 2000

EVALUATATION PLAN

COMPARE RETURN TO CREEL IN THUNDER AND TAWAS BAYS:

- 60,000 JUNE YEARLINGS (~ 175 MM)
- 30,000 OCTOBER YEARLINGS (~250 MM)
- STOCK ALONG SHORE
- THREE YEARS, BEGINNING 2001